John F. Beacom

Theoretical Astrophysics, MS-209	phone: (630) 840-3406
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P.O. Box 500	beacom@fnal.gov
Batavia, IL 60510	http://home.fnal.gov/~beacom/

Research Interests: Particle Astrophysics and Cosmology, Neutrinos and Weak Interactions

Positions Held:

2000–present:	David N. Schramm Fellow in Theoretical Astrophysics Fermi National Accelerator Laboratory
	Visiting Scholar, Department of Astronomy and Astrophysics, University of Chicago
	Associate Fellow, Center for Cosmological Physics, University of Chicago (since 2002)
1997–2000:	Sherman Fairchild Postdoctoral Scholar in Theoretical Physics California Institute of Technology

Education:

1997:	Ph.D. Physics, University of Wisconsin Title: *Semiclassical Analysis of Solar Neutrino Data*, Advisor: Baha Balantekin
1992:	M.S. Physics, University of Wisconsin
1991:	B.S. Physics and B.S. Mathematics, each with Departmental Honors, Highest Distinction, and College of Liberal Arts and Sciences Honors, University of Kansas

Graduate Awards:

1994–1995:	Wisconsin Alumni Research Foundation Graduate Fellow
1991–1994:	National Science Foundation Graduate Fellow
1991–1992:	Department of Physics Van Vleck Fellow

Selected Undergraduate Awards:

1990–1991:	Department of Physics and Astronomy James D. Stranathan Scholar (top senior)
1989–1991:	Department of Mathematics Charles H. Ashton Scholar (top undergraduate)

Research Assistantships:

1995–1997:	Department of Physics, University of Wisconsin
Summer 1991:	Institut Laue-Langevin, Grenoble, France
Summer 1990:	Fermi National Accelerator Laboratory, Batavia, Illinois
Summer 1989:	Argonne National Laboratory, Argonne, Illinois
1988–1989:	Department of Physics and Astronomy, University of Kansas

Students Supervised:

Graduate:	S. Palomares-Ruiz (Valencia), B. Fleming (Columbia), P. Crotty (Chicago)
Undergraduate:	M. Sharp (Columbia), W. Farr (Caltech)

November 13, 2003

Publications:

32. *GADZOOKS! Antineutrino Spectroscopy with Large Water Čerenkov Detectors*
John F. Beacom and Mark R. Vagins
submitted to Phys. Rev. Lett. [hep-ph/0309300]

31. *Sensitivity to θ_{13} and δ in the Decaying Astrophysical Neutrino Scenario*
John F. Beacom, Nicole F. Bell, Dan Hooper, Sandip Pakvasa, and Thomas J. Weiler
accepted for publication in Phys. Rev. D [hep-ph/0309267]

30. *Pseudo-Dirac Neutrinos, A Challenge for Neutrino Telescopes*
John F. Beacom, Nicole F. Bell, Dan Hooper, John G. Learned, Sandip Pakvasa, and Thomas J. Weiler
accepted for publication in Phys. Rev. Lett. [hep-ph/0307151]

29. *Measuring Flavor Ratios of High-Energy Astrophysical Neutrinos*
John F. Beacom, Nicole F. Bell, Dan Hooper, Sandip Pakvasa, and Thomas J. Weiler
Phys. Rev. D **68**, 093005 (2003) [hep-ph/0307025]

28. *Neutral-Current Atmospheric Neutrino Flux Measurement Using Neutrino-Proton Elastic Scattering in Super-Kamiokande*
John F. Beacom and Sergio Palomares-Ruiz
Phys. Rev. D **67**, 093001 (2003) [hep-ph/0301060]

27. *Decay of High-Energy Astrophysical Neutrinos*
John F. Beacom, Nicole F. Bell, Dan Hooper, Sandip Pakvasa, and Thomas J. Weiler
Phys. Rev. Lett. **90**, 181301 (2003) [hep-ph/0211305]

26. *Supernovae and Neutrinos*
John F. Beacom
in *Proceedings of the XXth International Conference on Neutrino Physics and Astrophysics*, eds. F. von Feilitzsch and N. Schmitz (Elsevier, 2003) [astro-ph/0209136]

25. *Detection of Supernova Neutrinos by Neutrino-Proton Elastic Scattering*
John F. Beacom, Will M. Farr, and Petr Vogel
Phys. Rev. D. **66**, 033001 (2002) [hep-ph/0205220]

24. *Supernova Neutrinos*
J.F. Beacom
in *Proceedings of the Third International Workshop on Neutrino Oscillations and their Origin*, eds. Y. Suzuki et al. (World Scientific, 2003) [Fermilab-Conf-02-367-A]

23. *Potential for Supernova Neutrino Detection in MiniBooNE*
Matthew K. Sharp, John F. Beacom, and Joseph A. Formaggio
Phys. Rev. D. **66**, 013012 (2002) [hep-ph/0205035]

22. *Do Solar Neutrinos Decay?*
John F. Beacom and Nicole F. Bell
Phys. Rev. D. **65**, 113009 (2002) [hep-ph/0204111]

Publications: (continued)

21. *CPT Violation and the Nature of Neutrinos*
G. Barenboim, J.F. Beacom, L. Borissov, and B. Kayser
Phys. Lett. B **537**, 227 (2002) [hep-ph/0203261]

20. *Stringent Constraints on Cosmological Neutrino-Antineutrino Asymmetries from Synchronized Flavor Transformation*
Kevork N. Abazajian, John F. Beacom, and Nicole F. Bell
Phys. Rev. D. **66**, 013008 (2002) [astro-ph/0203442]

19. *Enhanced Signal of Astrophysical Tau Neutrinos Propagating through Earth*
J.F. Beacom, P. Crotty, and E.W. Kolb
Phys. Rev. D. **66**, 021302(R) (2002) [astro-ph/0111482]

18. *SDSS J124602.54+011318.8: A Highly Luminous Optical Transient at z=0.385*
D. E. Vanden Berk, B. C. Lee, B. C. Wilhite, J. F. Beacom, D. Q. Lamb, J. Annis, K. Abazajian, T. A. McKay, et al. (SDSS collaboration)
Astrophys. J. **576**, 673 (2002) [astro-ph/0111054]

17. *Normalization of the Neutrino-Deuteron Cross Section*
J.F. Beacom and S.J. Parke
Phys. Rev. D **64**, 091302(R) (2001) [hep-ph/0106128]

16. *Black Hole Formation in Core-Collapse Supernovae and Time-of-Flight Measurements of the Neutrino Masses*
J.F. Beacom, R.N. Boyd, and A. Mezzacappa
Phys. Rev. D **63**, 073011 (2001) [astro-ph/0010398]

15. *Weak Proton Capture on ^{3}He*
L.E. Marcucci, R. Schiavilla, M. Viviani, A. Kievsky, S. Rosati, and J.F. Beacom
Phys. Rev. C **63**, 015801 (2001) [nucl-th/0006005]

14. *Technique for Direct eV-Scale Measurements of the Mu and Tau Neutrino Masses Using Supernova Neutrinos*
J.F. Beacom, R.N. Boyd, and A. Mezzacappa
Phys. Rev. Lett. **85**, 3568 (2000) [hep-ph/0006015]

13. *Neutrinos from the Next Galactic Supernova*
J.F. Beacom
in *Proceedings of the 23rd Johns Hopkins Workshop on Current Problems in Particle Theory: Neutrinos in the Next Millennium*, eds. G. Domokos and S. Kovesi-Domokos (World Scientific, 2000) [hep-ph/9909231]

12. *Neutrino Magnetic Moments, Flavor Mixing, and the SuperKamiokande Solar Data*
J.F. Beacom and P. Vogel
Phys. Rev. Lett. **83**, 5222 (1999) [hep-ph/9907383]

Publications: (continued)

11. *Angular Distribution of Neutron Inverse Beta Decay, $\bar{\nu}_e + p \to e^+ + n$*
P. Vogel and J.F. Beacom
Phys. Rev. D **60**, 053003 (1999) [hep-ph/9903554]

10. *Supernova Neutrinos and the Neutrino Masses*
J.F. Beacom
in *Proceedings of the 22nd Oaxtepec Symposium on Nuclear Physics*, Rev. Mex. Fis. **45**, Suppl. 2, 36 (1999) [hep-ph/9901300]

9. *Can a Supernova be Located by its Neutrinos?*
J.F. Beacom and P. Vogel
Phys. Rev. D **60**, 033007 (1999) [astro-ph/9811350]

8. *Mass Signature of Supernova ν_μ and ν_τ Neutrinos in the Sudbury Neutrino Observatory*
J.F. Beacom and P. Vogel
Phys. Rev. D **58**, 093012 (1998) [hep-ph/9806311]

7. *Mass Signature of Supernova ν_μ and ν_τ Neutrinos in SuperKamiokande*
J.F. Beacom and P. Vogel
Phys. Rev. D **58**, 053010 (1998) [hep-ph/9802424]

6. *Green's Function for Nonlocal Potentials*
A.B. Balantekin, J.F. Beacom, and M.A. Cândido Ribeiro
J. Phys. G **24**, 2087 (1998) [nucl-th/9709007]

5. *Matter-Enhanced Neutrino Oscillations in the Quasi-Adiabatic Limit*
A.B. Balantekin, J.F. Beacom, and J.M. Fetter
Phys. Lett. B **427**, 317 (1998) [hep-ph/9712390]

4. *A Semiclassical Approach to Level Crossing in Supersymmetric Quantum Mechanics*
J.F. Beacom and A.B. Balantekin
in *Springer Lecture Notes in Physics No. 502: Supersymmetry and Integrable Models*, eds. H. Aratyn et al. (Springer, 1998) [hep-th/9709117]

3. *Semiclassical Treatment of Matter-Enhanced Neutrino Oscillations for an Arbitrary Density Profile*
A.B. Balantekin and J.F. Beacom
Phys. Rev. D **54**, 6323 (1996) [hep-ph/9606353]

2. *Production of Weak Bosons and Higgs Bosons in e^-e^- Collisions*
V. Barger, J.F. Beacom, K. Cheung, and T. Han
Phys. Rev. D **50**, 6704 (1994) [hep-ph/9404335]

1. *Gravitational Clustering in the Expanding Universe: Controlled High Resolution Studies in Two Dimensions*
J.F. Beacom, K.G. Dominik, A.L. Melott, S.P. Perkins, and S.F. Shandarin
Astrophys. J. **372**, 351 (1991)

Invited Plenary Conference Talks:

23. *Neutrino Astrophysics: Theoretical Status and Experimental Outlook*
Weak Interactions and Neutrinos Workshop, Lake Geneva, Wisconsin, October 2003

22. *Neutrino Masses and Mixings: Implications*
SLAC Summer Institute Topical Conference, Stanford, California, August 2003

21. *Neutrino Astrophysics and Cosmology*
Gordon Conference on Nuclear Physics, Waterville, Maine, July 2003

20. *Particle and Nuclear Astrophysics*
Conference on the Intersections of Particle and Nuclear Physics, New York, New York, May 2003

19. *Supernova Neutrinos: GADZOOKS!*
Trends in Neutrino Physics, Argonne National Laboratory, May 2003

18. *Precision Neutrino Astrophysics*
Theory Symposium on Rare Isotope Accelerator Science, Argonne National Laboratory, April 2003

17. *The Solution of the Solar Neutrino Problem*
Fall Meeting of the APS Division of Nuclear Physics, East Lansing, Michigan, October 2002

16. *Supernovae and Neutrinos*
Neutrino 2002: XXth International Conference on Neutrino Physics and Astrophysics, Munich, Germany, May 2002

15. *The Nu World: Navigating by the Stars (Solar Neutrinos)*
Meeting of the APS Division of Particles and Fields, Williamsburg, Virginia, May 2002

14. *Supernova Neutrinos*
NOON2001: Neutrino Oscillations and their Origin, Tokyo, Japan, December 2001

13. *Measuring the Properties of Newly-Formed Neutron Stars*
Neutron Stars Workshop, Seattle, Washington, July 2001

12. *Supernova Neutrino Physics: Measuring the Source Properties*
Physics Potential of Supernova II Neutrino Detection, Marina del Rey, California, February 2001

11. *Supernova Neutrino Observatories*
Neutrino Workshop, Seattle, Washington, September 2000

10. *Neutrinos from Supernovae*
Aspen Winter Conference on Particle Physics, Aspen, Colorado, January 2000

9. *What Can We Learn By Observing Supernova Neutrinos?*
Meeting of the APS Division of Nuclear Physics, Asilomar, California, October 1999

8. *Measuring Neutrino Mass with Supernova Neutrinos*
International Conference on Astrophysics at High T and Low Tau, Sedona, Arizona, August 1999

Invited Plenary Conference Talks (continued)

7. *Supernova Location by Neutrinos*
Low-Energy Neutrino Physics Workshop, Institute for Nuclear Theory, Seattle, Washington, July 1999

6. *Neutrinos from the Next Galactic Supernova*
23rd Johns Hopkins Workshop on Current Problems in Particle Theory: Neutrinos in the Next Millennium, Baltimore, Maryland, June 1999

5. *Symmetries and Supersymmetries in Neutrino Physics*
Symmetry Principles in Many-Body Physics, Honolulu, Hawaii, February 1999

4. *Supernova Neutrinos and the Neutrino Masses*
22nd Symposium on Nuclear Physics, Oaxtepec, Mexico, January 1999

3. *Neutrino Properties from the Next Supernova*
Supernova Early Alert Network Workshop, Boston University, September 1998

2. *Pointing to the Supernova*
Supernova Early Alert Network Workshop, Boston University, September 1998

1. *Semiclassical Treatment of Matter-Enhanced Neutrino Oscillations for an Arbitrary Density Profile*
Supersymmetry and Integrable Models Workshop, University of Illinois in Chicago, June 1997

Seminars and Colloquia:

32. *Detecting the Diffuse Supernova Neutrino Background*
High-Energy/Astrophysics Seminar, Ohio State University, November 2003

31. *Frontiers in Neutrino Astrophysics*
High-Energy/Nuclear Physics Seminar, University of Illinois at Urbana-Champaign, October 2003

30. *Frontiers in Neutrino Astrophysics*
Astronomy Colloquium, University of Illinois at Urbana-Champaign, October 2003

29. *Frontiers in Neutrino Astrophysics*
Center for Cosmological Physics Colloquium, University of Chicago, April 2003

28. *Frontiers in Neutrino Astrophysics*
Astrophysics and Cosmology Seminar, University of Minnesota, March 2003

27. *Frontiers in Neutrino Astrophysics*
Physics Colloquium, Stanford University, February 2003

26. *Frontiers in Neutrino Astrophysics*
HEP Division Seminar, Argonne National Laboratory, February 2003

25. *Supernova Neutrino Physics and Astrophysics*
HEP Seminar, University of Illinois at Chicago, January 2003

24. *Supernova Neutrino Physics and Astrophysics*
Physics Colloquium, University of Chicago, April 2002

23. *Supernova Neutrino Physics and Astrophysics*
Astrophysics Colloquium, University of Wisconsin, March 2002

22. *Astrophysical Aspects of Neutrino-Nucleon Scattering*
Indiana University Cyclotron Facility Seminar, Indiana University, November 2001

21. *Supernova Neutrinos*
Colloquium, Fermilab, November 2001

20. *Astrophysical Aspects of Neutrino-Nucleon Scattering*
Nuclear Science Seminar, Michigan State University, August 2001

19. *New Astrophysical Tests: With Neutrinos, and Of Neutrinos*
Theoretical Physics Seminar, SLAC, June 2001

18. *New (Theoretical) Results in Supernova Neutrino Detection*
Quarks, Hadrons, and Nuclei Theory Seminar, University of Maryland, May 2001

17. *A New Look at the Neutrino Magnetic Moments*
High Energy Physics Seminar, Caltech, June 2000

Seminars and Colloquia: (continued)

16. *Black Hole Formation in Core-Collapse Supernovae and Direct Measurements of Neutrino Masses*
Theoretical Astrophysics and Relativity Seminar, Caltech, May 2000

15. *Neutrinos from the Next Galactic Supernova*
Nuclear Science Division Colloquium, Lawrence Berkeley Laboratory, March 2000

14. *New Tests of Neutrino Properties with Solar and Supernova Neutrinos*
Theoretical Astrophysics Seminar, Fermilab, January 2000

13. *Neutrino Mass Constraints from Supernovae*
Institute for Nuclear Theory Seminar, University of Washington, July 1999

12. *Neutrinos from the Next Galactic Supernova*
Particle/Nuclear Physics Seminar, University of California – Los Angeles, May 1999

11. *Supernova Neutrinos and the Neutrino Masses*
High Energy Physics Seminar, Caltech, May 1999

10. *Neutrinos from the Next Galactic Supernova*
High Energy Physics Seminar, University of Pennsylvania, April 1999

9. *Neutrinos from the Next Galactic Supernova*
Nuclear/Particle Astrophysics Seminar, Princeton University, April 1999

8. *Neutrinos from the Next Supernova*
Physics Department Colloquium, University of Kansas, November 1998

7. *SuperKamiokande and Neutrinos from the Next Supernova*
Particles and Fields Seminar, Boston University, September 1998

6. *Mass Signature of Supernova ν_μ and ν_τ Neutrinos in the Sudbury Neutrino Observatory*
Institute for Nuclear and Particle Astrophysics Seminar, Lawrence Berkeley Laboratory, May 1998

5. *How to Measure the Mu and Tau Neutrino Masses with a Supernova*
Astrophysics Seminar, University of California – San Diego, April 1998

4. *Mass Signature of Supernova ν_μ and ν_τ Neutrinos in SuperKamiokande*
Kellogg Radiation Laboratory Seminar, Caltech, March 1998

3. *Semiclassical Treatment of Matter-Enhanced Neutrino Oscillations for an Arbitrary Density Profile*
Theory Seminar, Argonne National Laboratory, March 1997

2. *Semiclassical Treatment of Matter-Enhanced Neutrino Oscillations for an Arbitrary Density Profile*
Medium-Energy Theory Seminar, Los Alamos National Laboratory, January 1997

1. *Semiclassical Treatment of Matter-Enhanced Neutrino Oscillations for an Arbitrary Density Profile*
Nuclear Theory Seminar, University of Washington, January 1997

Other Conference Talks:

15. *High-Energy Astrophysical Neutrino Decay*
April Meeting of the APS, Philadelphia, April 2003

14. *Reactor θ_{13} Measurement*
Mini-Workshop on Reactor Theta-13 Experiments, Fermilab, March 2003

13. *Summary of Supernova Neutrinos Working Group*
Conference on Underground Science, Lead, South Dakota, October 2001

12. *Supernova Neutrinos: Black Hole Formation and the Neutrino Masses*
Frontiers in Contemporary Physics II, Nashville, Tennessee, March 2001

11. *Supernova Neutrino Detection: New Possibilities and Needs*
Neutrino Workshop, Seattle, Washington, September 2000

10. *A New Direct Limit on the Neutrino Magnetic Moment*
April Meeting of the APS, Long Beach, California, April 2000

9. *Towards the Centers of the Stars: Solar and Supernova Neutrinos*
Cosmic Genesis and Fundamental Physics, Sonoma, California, October 1999

8. *Neutrino Mass Tests with Supernovae*
Second Meeting of the German-American Young Scholars' Institute on Astroparticle Physics, Munich, Germany, September 1999

7. *Mass Signature of Supernova Mu and Tau Neutrinos*
Meeting of the APS Division of Nuclear Physics, Santa Fe, New Mexico, October 1998

6. *Mu and Tau Neutrino Masses From Supernova Neutrino Detection*
Neutrino Physics and Astrophysics Workshop, Aspen Center for Physics, Aspen, Colorado, June 1998

5. *Semiclassical Treatment of Matter-Enhanced Neutrino Oscillations for an Arbitrary Density Profile*
Pheno '97: Recent Developments in Phenomenology, University of Wisconsin, March 1997

4. *Semiclassical Treatment of Matter-Enhanced Neutrino Oscillations for an Arbitrary Density Profile*
Nucleosynthesis in the Big Bang, Stars, and Supernovae, Institute for Nuclear Theory, University of Washington, August 1996

3. *Semiclassical Treatment of Matter-Enhanced Neutrino Oscillations for an Arbitrary Density Profile*
Midwest Nuclear Theory Get-Together, Argonne National Laboratory, September 1996

2. *Analytic Treatment of Solar Neutrino Oscillations*
Meeting of the APS Division of Nuclear Physics, Bloomington, Indiana, October 1995

1. *Analytic Treatment of the MSW Problem*
Midwest Nuclear Theory Get-Together, Argonne National Laboratory, September 1995

Professional Activities–Advisory:

• Referee for Astroparticle Physics, Astrophysical Journal, Journal of Cosmology and Astroparticle Physics, Journal of High Energy Physics, Journal of Mathematical Physics, Monthly Notices of the Royal Astronomical Society, Nuclear Physics B, Physics Letters B, Physical Review Letters, Physical Review C, and Physical Review D

• Grant referee for Institute of Geophysics and Planetary Physics (astrophysics) and also Laboratory-Directed Research and Development (physics), Los Alamos National Laboratory

• External Ph.D. thesis examiner for Matthew Malek (*A Search for Supernova Relic Neutrinos [in Super-Kamiokande]*), Department of Physics, SUNY Stony Brook, May 2003

• External Ph.D. thesis examiner for Jaret Heise (*A Search for Supernova Neutrinos with the Sudbury Neutrino Observatory*), Department of Physics and Astronomy, University of British Columbia, December 2001

• Guest member of the Editorial Committee for Volume 52 (2002), Annual Review of Nuclear and Particle Science, October 2000

• Contributing consultant to the report *Opportunities in Nuclear Astrophysics: Conclusions of a Town Meeting held at the University of Notre Dame, 7-8 June 1999*

Professional Activities–Collaborations:

• National Underground Science Laboratory (NUSL) Homestake collaboration, 2002–present

• Theoretical Advisory Committee for the Underground Nucleon Decay and Neutrino Observatory (UNO), 2001–present

Professional Activities–Conferences:

• Member of the Program Committee, Third International Workshop on Neutrino-Nucleus Interactions in the Few-GeV Region, Gran Sasso, Italy, March 2004

• Vice-chair, National Nuclear Physics Summer School Committee, 2003 – present

• Member of the Steering Committee for the Cosmo conference series, 2002 – present

• Co-organizer of "Workshop on Neutrino News from the Lab and the Cosmos" (125 participants), Fermilab, Batavia, Illinois, October 2002

• Co-chair (with Sean Carroll and Evalyn Gates) of the Local Organizing Committee for "Cosmo-02: International Workshop on Particle Physics and the Early Universe" (265 participants, 28 plenary talks, 72 parallel talks), Adler Planetarium, Chicago, Illinois, September 2002

• Working group co-convener for "Supernova Neutrinos," Conference on Underground Science, Lead, South Dakota, October 2001

• Working group co-convener for "Solar Neutrinos and Neutrino Astrophysics," Long Range Plan for Nuclear Science – Town Meeting on Astrophysics, Neutrinos, and Symmetries, Berkeley, California, November 2000

• Co-organizer of the Workshop on Quark and Lepton Mixing, Meeting of the APS Division of Nuclear Physics, Asilomar, California, October 1999

Professional Activities–Education and Public Outreach:

• Active in Education and Public Outreach efforts at Fermilab: frequent lectures to groups of visiting students of all ages, Fermilab graduate students (Tevatron University), local high school students (Saturday Morning Physics), Fermilab non-technical staff (Physics for Everyone), and visiting teachers; consultant on exhibits for the Lederman Science Center; frequent contact with the press and the public discussing physics; etc., 2000–present

• Taught a course for the public, *A Physicist Looks at the Sun*, Adler Planetarium, Chicago, Illinois, February 2002

• Member of the Nuclear Science Wallchart Committee; co-author of *Nuclear Science – A Teacher's Guide to the Nuclear Science Wall Chart*, G. Aubrecht et al. (Contemporary Physics Education Project, 1998)

• Teaching Assistant for a laboratory course on modern physics, Department of Physics and Astronomy, University of Kansas, 1990 – 1991

Professional Activities–Local:

• Member of the Fermilab Colloquium Committee, 2002, 2003

• Organizer of the Fermilab Theoretical Astrophysics Postdoc Search, 2000, 2001, 2002, 2003

• Organizer of the Fermilab Theoretical Astrophysics Seminars, 2000 – 2001

Professional Activities–Students:

• Research advisor of Sergio Palomares-Ruiz (University of Valencia graduate student), visiting Fermilab in Fall 2001 and Fall 2002; this work was published as J. F. Beacom and S. Palomares-Ruiz, *Neutral-Current Atmospheric Neutrino Flux Measurement Using Neutrino-Proton Elastic Scattering in Super-Kamiokande*, Phys. Rev. D **67**, 093001 (2003)

• Research advisor of Bonnie Fleming (Columbia University graduate student) for part of her Ph.D. work with Prof. Janet Conrad, 2001 – 2002; a paper on the neutrino magnetic moment sensitivity of MiniBooNE is in preparation

• Research advisor of Patrick Crotty (University of Chicago graduate student) with Prof. Rocky Kolb, 2000 – 2002; his Ph.D. thesis was published as P. Crotty, *High-Energy Neutrino Fluxes from Supermassive Dark Matter*, Phys. Rev. D **66**, 063504 (2002)

• Research advisor of Matthew Sharp (Columbia University undergraduate) with Prof. Janet Conrad, Summer 2001; this work was published as M.K. Sharp, J.F. Beacom and J.A. Formaggio, *Potential for Supernova Neutrino Detection in MiniBooNE*, Phys. Rev. D **66**, 013012 (2002)

• Research advisor of Will Farr (Caltech undergraduate) with Dr. Petr Vogel, Summer 2000; this work was published as J.F. Beacom, W.M. Farr and P. Vogel, *Detection of Supernova Neutrinos by Neutrino-Proton Elastic Scattering*, Phys. Rev. D **66**, 033001 (2002)

REFERENCES

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